

Sofia University

Faculty of economics and business administration

Course project

Management Information Systems

by

Miroslav Nikolov

fN: **78586**

The Digital Firm: Electronic Business and Electronic Commerce

ELECTRONIC BUSINESS, ELECTRONIC COMMERCE, AND THE EMERGING DIGITAL FIRM

I will try to show you the benefits of integrating information across the enterprise, creating an information technology infrastructure in which information flows seamlessly from one part of the organization to another and from the organization to its customers, suppliers, and business partners. Internet technology has emerged as the key enabling technology for this digital information integration.

As in many industries, sales from e-commerce in the IT and consumer electronics industry are growing faster than sales from other sources. Customers are placing ever greater value on the transparency of the Internet, where they can research products and prices thoroughly before purchasing them.

INTERNET TECHNOLOGY AND THE DIGITAL FIRM

The Internet is rapidly becoming the infrastructure of choice for electronic commerce because it offers businesses an even easier way to link with other businesses and individuals at a very low cost. It provides a universal and easy-to-use set of technologies and technology standards for all organizations, no matter which computer system or information technology platform the organizations are using. Trading partners can directly communicate with each other, bypassing intermediaries and inefficient multilayered procedures. Web sites are available to consumers 24 hours a day.

Some information-based products, such as software, music, and videos, can actually be physically distributed over the Internet. Vendors of other types of products and services use the Internet to distribute the information surrounding their wares, such as product pricing, options, availability, and delivery time. The Internet can replace existing distribution channels or extend them, creating outlets for attracting and serving customers who otherwise would not patronize the company. For example, Web-based discount brokerages have attracted new customers who could not afford paying the high commissions and fees charged by conventional brokerage and financial services firms.

Internet technology is helping companies radically reduce their transaction costs. Transaction costs are the costs of searching for buyers and sellers, collecting information on products, negotiating terms, writing and enforcing contracts, and transporting merchandise. Information on buyers, sellers, and prices for many products is immediately available on the Web.

Moreover, Internet technology is providing the infrastructure for running the entire business because its technology and standards enable information to flow seamlessly from one part of the organization to another. Internet technology provides a much less expensive and easier to use alternative for coordination activities than proprietary networks.

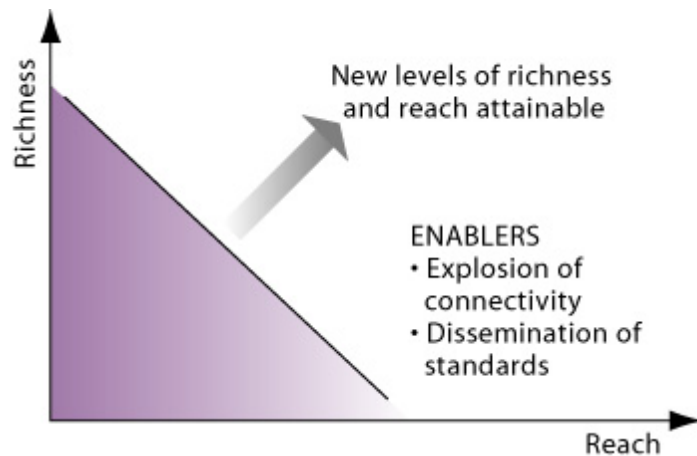
Managers are using e-mail and other Internet communication capabilities to oversee larger numbers of employees, to manage many tasks and subtasks in projects, and to coordinate the work of multiple teams working in different parts of the world. Internet standards can link disparate systems, such as those for order processing and logistics tracking, which previously could not communicate with each other. The Internet also reduces other agency costs, such as the cost to coordinate activities of the firm with suppliers and other external business partners. The low-cost connectivity and universal standards provided by Internet technology are the driving force behind the explosion of electronic business and the emergence of the digital firm. It can allow the existence of virtual firms with people from around the world.

New Business Models and Value Propositions

The Internet has introduced major changes in the way companies conduct business. It has created a dramatic decline in the cost of developing, sending, and storing information while making that

information more widely available. If a consumer wanted to find out about the features, price, and availability of a refrigerator or an automobile, for instance, that person had to visit a retail store that sold those products. The cost of comparison shopping was very high because people had to physically travel from store to store. The customer can compare a lot of products before buying and this usually improves the quality/price relation. Selling books and other goods directly to consumers online without using physical storefronts represents a new business model.

Using the Internet and Web multimedia capabilities, companies are able to provide detailed product information quickly and inexpensively and detailed information specific to each customer to very large numbers of people simultaneously.



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INTERNET BUSINESS MODELS

There are different business models and the boundaries are fading. Still we can distinguish: virtual storefront (Amazon.com), online marketplace (eBay.com), content provider (bbc.com, any music selling site), portal (yahoo.com)

ELECTRONIC COMMERCE

Business-to-consumer (B2C) electronic commerce involves retailing products and services to individual shoppers. BarnesandNoble.com, which sells books, software, and music to individual consumers, is an example of B2C e-commerce.

Business-to-business (B2B) electronic commerce involves sales of goods and services among businesses. Milacron's Web site for selling machinery, mold bases, and related tooling, supplies, and services to companies engaged in plastics processing is an example of B2B e-commerce.

Consumer-to-consumer (C2C) electronic commerce involves consumers selling directly to consumers. For example, eBay, the giant Web auction site, enables people to sell their goods to other consumers by auctioning the merchandise off to the highest bidder.

DIRECT ONLINE SALES

Operators of virtual storefronts, such as Amazon.com, do not have large expenditures for rent, sales staff, and the other operations associated with a traditional retail store. Airlines can sell tickets directly to passengers through their own Web sites or through travel sites such as Lessno without paying commissions to travel agents.

By selling directly to consumers or reducing the number of intermediaries, companies can achieve higher profits while charging lower prices.

COOKIES...AND SIMILAR TECHNIQUES

Marketers are using the interactive features of Web pages to hold consumers' attention or to capture detailed information about consumer tastes and interests for one-to-one marketing. Web sites have become a bountiful source of detailed information about customer behavior, preferences, needs, and buying patterns that companies can use to tailor promotions, products, services, and pricing. Some customer information may be obtained by asking visitors to "register" online and provide information about themselves, but many companies also collect customer information using software tools that track the activities of Web site visitors.

AUTOMATED SELF-SERVICE

Web-based responses to customer questions cost only a fraction of what a live customer service representative on the telephone costs.

For example, if a customer calls a call-centre to hire a car, they will be charged more for the service, than if using the internet site.

BUSINESS TO BUSINESS ELECTRONIC COMMERCE 80% OF IT IS EDI

Electronic data interchange (EDI) enables the computer-to-computer exchange between two organizations of standard transactions, such as invoices, bills of lading, shipment schedules, or purchase orders. Transactions are automatically transmitted from one information system to another through a network, eliminating the printing and handling of paper at one end and the inputting of data at the other.

Although many organizations still use private networks for EDI, companies are increasingly turning to the Internet for this purpose because it provides a much more flexible and low-cost platform for linking to other firms. For example, procurement involves not only purchasing goods and materials but also sourcing, negotiating with suppliers, paying for goods, and making delivery arrangements. Businesses can now use the Internet to locate the most low-cost supplier, search online catalogs of supplier products, negotiate with suppliers, place orders, make payments, and arrange transportation.

Private industrial networks vs. Net marketplaces

Private industrial networks

A private industrial network, also known as a private exchange, links a firm to its suppliers, distributors, and other key business partners for efficient supply chain management and other collaborative activities.

Net marketplaces

Net marketplaces are online marketplaces where multiple buyers can purchase from multiple sellers. Net marketplaces, which are sometimes called e-hubs, provide a single digital marketplace based on Internet technology for many different buyers and sellers. They are industry-owned or operate as independent intermediaries between buyers and sellers. Net marketplaces are more transaction oriented (and less relationship oriented) than private industrial networks, generating revenue from purchase and sale transactions and other services provided to clients.

ELECTRONIC COMMERCE PAYMENT SYSTEMS

Special electronic payment systems have been developed to pay for goods electronically on the Internet. Electronic payment systems for the Internet include systems for credit card payments (we all know), digital cash (secure services for credit card payment, that protect information, digital wallets, accumulated balance digital payment systems, stored value payment systems, peer-to-peer payment systems, electronic checks, and electronic billing presentment and payment systems).

Digital wallets make paying for purchases over the Web more efficient by eliminating the need for shoppers to enter their address and credit card information repeatedly each time they buy something.

Micropayment systems have been developed for purchases of less than \$10, such as downloads of individual articles or music clips, that would be too small for conventional credit card payments. (like virtual chips)

Accumulated balance digital payment systems enable users to make micropayments and purchases on the Web, accumulating a debit balance that they must pay periodically on their credit card or telephone bills.

Stored value payment systems enable consumers to make instant online payments to merchants and other individuals based on value stored in a digital account.

The smart card can store health records, identification data, or telephone numbers, or it can serve as an “electronic purse” in place of cash. The computer must have a special device to read the card. (no longer used)

Digital cash is currency represented in electronic form that moves outside the normal network of money (paper currency, coins, checks, credit cards). Users are supplied with client software and can exchange money with another e-cash user over the Internet or with a retailer accepting e-cash. eCoin.net is an example of a digital cash service. In addition to facilitating micropayments, digital cash can be useful for people who do not have credit cards and wish to make Web purchases.

New Web-based peer-to-peer payment systems have sprung up to serve people who want to send money to vendors or individuals who are not set up to accept credit card payments. The party sending money uses his or her credit card to create an account with the designated payment at a Web site dedicated to peer-to-peer payments. The recipient “picks up” the payment by visiting the Web site and supplying information about where to send the payment (a bank account or a physical address). PayPal has become a popular peer-to-peer payment system.

Digital checks are less expensive than credit cards and much faster than traditional paper-based checking. These checks are encrypted with a digital signature that can be verified and used for payments in electronic commerce. Electronic check systems are useful in business-to-business electronic commerce.

Electronic billing presentment and payment systems are used for paying routine monthly bills.

INTRANET

An **intranet** is a computer network that uses Internet Protocol technology to securely share any part of an organization's information or network operating system within that organization. It is the connection of computer networks in a local area. The term is used in contrast to internet, a network between organizations, and instead refers to a network within an organization. Sometimes, the term refers only to the organization's internal website, but may be a more extensive part of the organization's information technology infrastructure. It may host multiple private websites, for example.

A principal use of intranets has been to create online repositories of information that can be updated as often as required. Product catalogs, employee handbooks, telephone directories, or benefits information can be revised immediately as changes occur.

Intranets provide a rich set of tools for creating collaborative environments in which members of an organization can exchange ideas, share information, and work together on common projects and assignments regardless of their physical location. These systems are developed for all major functional areas of business.

FINAL NOTES.

E-business and e-commerce often require new organizational designs and management processes to take advantage of Internet technology. Companies may need to redesign entire business processes rather than trying to graft new technology on existing business practices. Companies must consider a different organizational structure, changes in organizational culture, a different support structure for information systems, different procedures for managing employees and networked processing functions, and, perhaps, a different business strategy.

CASE SCENARIO

1. The Company

Candida is a Spanish company, an online retailer for luxurious lingerie. Today it is mainly active in the B2C market, with over 30,000 customers. Its annual rate of growth is between 40 and 80%.

Background, Industry, Products, and Target Group

Candida was founded in 2003 and started out as an online retailer. They still do not have retail outlets.

The company was started when the online shop was activated. It was founded by a single person. The shop was discovered on the Internet by prospective customers and, to the owners' great surprise, customers started to order products. The company started out with its founder and one employee accepting orders for the goods.

Eight years later, in 2012, Candida employs a total of 15 staff on different contracts. This corresponds to a full-time equivalent (FTE) of 13 employees. Candida has developed into a retailer with a central logistics facility and an extensive online shop.

On the one hand, sales turnover has increased steadily in recent years. This is due low margins have prevailed in the industry for many years at all levels of retail. This forces retailers to design their processes very efficiently and purchase goods as cheaply as possible.

In recent years, direct sales channels have become more and more established, not least due to the rise of e-commerce. Manufacturers are increasingly supplying retailers or selling directly to end customers (direct distribution).

Candida started out selling luxurious lingerie. Candida offers a total of 8,000 items, 5,000 of which it stocks in its own warehouses.

So far, Candida has concentrated on the B2C area, selling its products in Spain only.

Corporate Vision

Candida will continue to base its competitive strategy on its online shop, back office, and call center (**multi-channel sales**).

Importance of IT and E-Business

IT and e-business are essential to Candida if it is to achieve a high level of efficiency. Candida's only option for aligning its information systems optimally with its workflows was to develop its own solution for order processing, inventory management, customer management (referred to as an "ERP system") and its online shop, with the associated amount of effort. If workflows change, the system can be adjusted in a matter of hours. This creates a considerable degree of flexibility. As a result, the custom development of the ERP system and online shop has become one of Candida's core competencies.

2. Reasons for the Project

When Candida started out, the market for standard software did not offer a wide range of fully-developed, cost-effective software for online shops. It was clear from the outset, therefore, that the shop would have to be a custom development. The first shop was based on a MySQL database.

Due to the growing volume of transactions, the central IT systems had to be migrated to a more powerful database in 2006. To this end, the commonly-used ERP and online shop systems on the market were evaluated thoroughly in 2003. This evaluation took account of the costs of the systems as well as their suitability for Candida's processes.

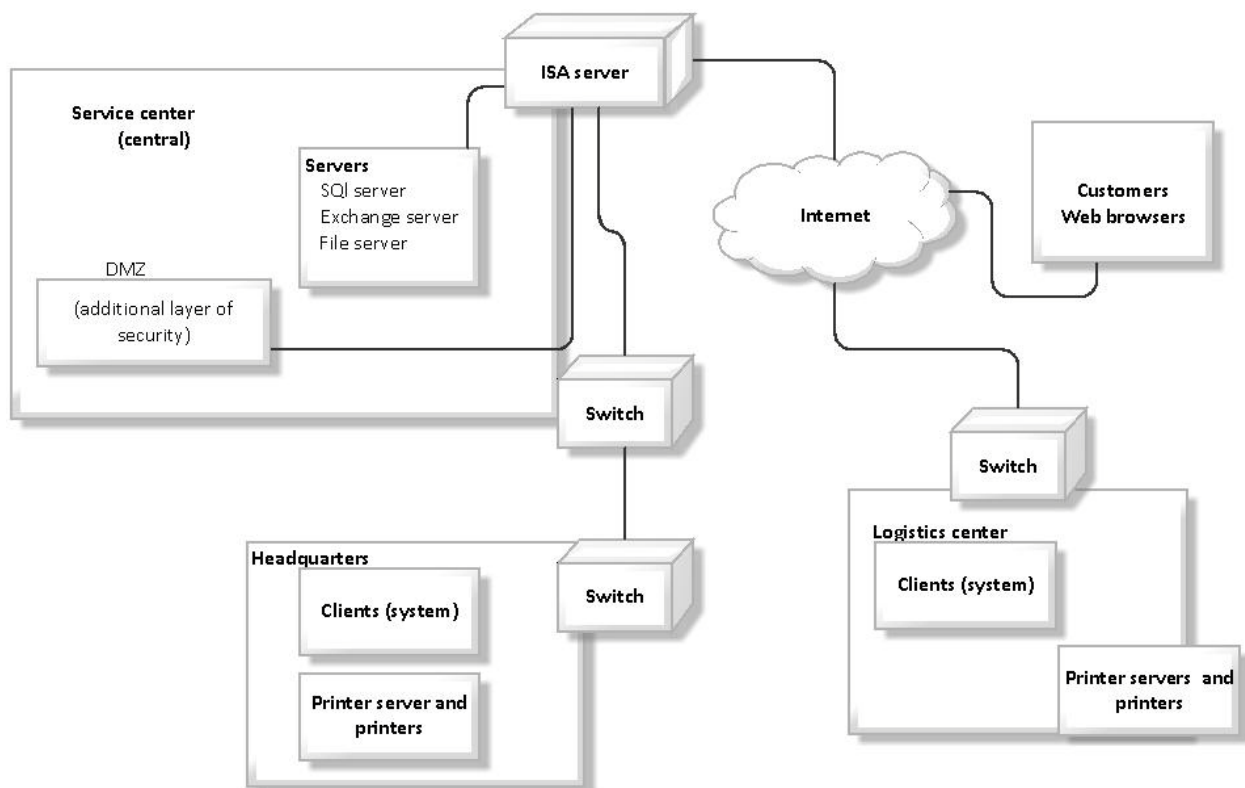
The evaluation concluded that the standard software available was flexible enough, but the owner was familiar with IT and could devise their own custom software. It was also felt that many of the software products were very user unfriendly (low level of usability). As a result of this evaluation, a decision was made to develop a custom ERP system and online shop.

3. Transaction Support in E-Commerce

Business Perspective and Goals

The fully-developed, highly usable online shop demonstrates Candida's customer focus.

This also applies to multi-channel sales. Customers can choose from several channels depending on their own needs and preferences. 1 shows how Candida bundles the offerings of manufacturers and wholesalers on one side and forwards them to customers through various channels on the other.



1 Business Scenario: Transactions in E-Sales

In an industry with low margins, the combination of low prices and high-quality offering through several sales channels can only succeed if the cost structure is extremely efficient. As a result, process costs in the areas of procurement, stockholding, and order processing are central to Candida's business concept in addition to purchase prices. Low process costs are achieved by a series of optimization measures to which the support provided by the business software is essential. Custom development for the ERP system and online shop pursued the following objectives, therefore:

- Design the operative processes to be flexible and easy to adjust
- Keep the costs of the operative processes low
- Keep the costs of the IT system low

The support provided by IT benefits customers not only by facilitating low prices, but also by supporting them throughout the entire transaction process. This is best illustrated by a transaction process in which a customer places a purchase order. In e-commerce in particular, the transaction process is normally divided into five phases: the suggestion phase, information phase, agreement phase, processing phase (or fulfillment phase), and retention phase (or after-sales phase). Candida supports its customers in the individual phases of the transaction process as follows:

Suggestion Phase

For providers, the main focus of the suggestion phase is to match their offerings with a latent requirement of potential customers. To do this, providers need a forum in which to address customers, which is primarily provided by means of advertising. Providers must also communicate a message that speaks to the latent requirements of customers and encourages them to place an order or at least to investigate the offering. This applies not only to winning new customers, but also to retaining existing ones.

Candida employs various marketing instruments during this phase. That includes offline instruments such as printed adverts, billboards, and recently also television adverts. Online instruments such as banners and inclusion in price comparison portals are also used.

Customers require some basic information before they can decide whether to place an order. Candida's prospective customers need the URL of the online shop, information essential to the buying process such as how they can obtain information. They can call the call center of Candida by telephone, who they can contact if they have problems, and how they can pay. Customers must have this basic information before they can start to examine the details of the offer, which is the outcome of a successful suggestion phase.

Information Phase

The information phase is a key step in the buying process. In this phase, the customer gathers information about the offer from a company. The main aim of this phase is to identify a suitable product and find out about its quality, price, availability, and so on. The information phase ends with a full shopping basket.

The shop application is with high level of usability by operator and of the website by the customer. The focus was on a clear catalog design, intuitive operation, and first rate search functions. Each product is categorized based on its

properties to enable users to perform structured product searches by category. This also makes it easy to compare products within a category. The design of the website was done with a lot of css, because the background must be as an art project for the customer to feel blue atmosphere.

Customers receive additional information in the form of special offers, bestsellers, and news that are shown at product category level (special offers) or can be called (bestsellers, news). Customers can call recommendations at item level in the form of accessories or ratings.

Due to Candida's multi-channel strategy, support for the information phase is not restricted to the online shop. In addition to searching the electronic product catalog, customers can receive information in person by telephone from the call center, or by e-mail.

Agreement Phase

The aim of the agreement phase is to conclude a valid contract regulating the delivery and payment of the goods based on the filled shopping basket. The provider and customer must agree upon several contractual details such as the price, quantity, shipping type, payment method, delivery and payment dates, and additional costs such as transport costs. Key framework conditions for this are set out in the general terms and conditions and in the warranty conditions. In Internet business, the contract takes effect as soon as the customer receives an order confirmation from the provider.

Candida supports customers during the agreement phase by means of a streamlined, clearly structured checkout process. This includes, for example, the option of specifying whether the goods are to be delivered, as well as the services required such as on-site installation or extended warranty. The customer can choose between several payment methods: Inpayment slip (ISR - inpayment slip with reference number), credit card, cash on delivery, or the Spanish postal services. Private customers must pay in advance regardless of the payment method selected. Corporate customers can pay retroactively on account. To prevent payment shortfalls, credit rating checks are carried out and credit insurance taken out.

Fulfillment Phase

After a valid contract has come into effect between the contractual partners, it must be fulfilled by both parties (fulfillment). The provider fulfills the contract by transferring ownership of the goods and the customer by making payment.

For purchase orders from private customers, fulfillment at Candida starts with payment. The shipping process is not triggered until the payment has been received.

Candida operates a logistics center in Madrid to process the flows of goods. This logistics center is the hub of the entire inventory management process. Around 5,000 of the 7,000 items offered in the online shop are stored in the warehouse.

Goods are sent to customers by post or delivery courier. The postal service picks up the shipments at Candida several times a day so that the customer can receive the goods on the following day.

If the customer has to return an item, he can address it either to Candida or to a service center of the manufacturer. It is normally cheaper for the customer to return the goods directly to the service center of the manufacturer, since the goods arrive there faster and are also returned directly to the customer.

The customer can follow the status of order processing and delivery in his customer account. If goods are sent by the

postal service, it is also possible to track and trace them. If the delivery details previously agreed upon change, the customer is informed automatically by e-mail.

Retention Phase

The next phase after contract fulfillment is the retention phase, which is also often referred to as the after-sales phase. The key aim of this phase is to retain the customer and transition to the suggestion phase for a new buying process.

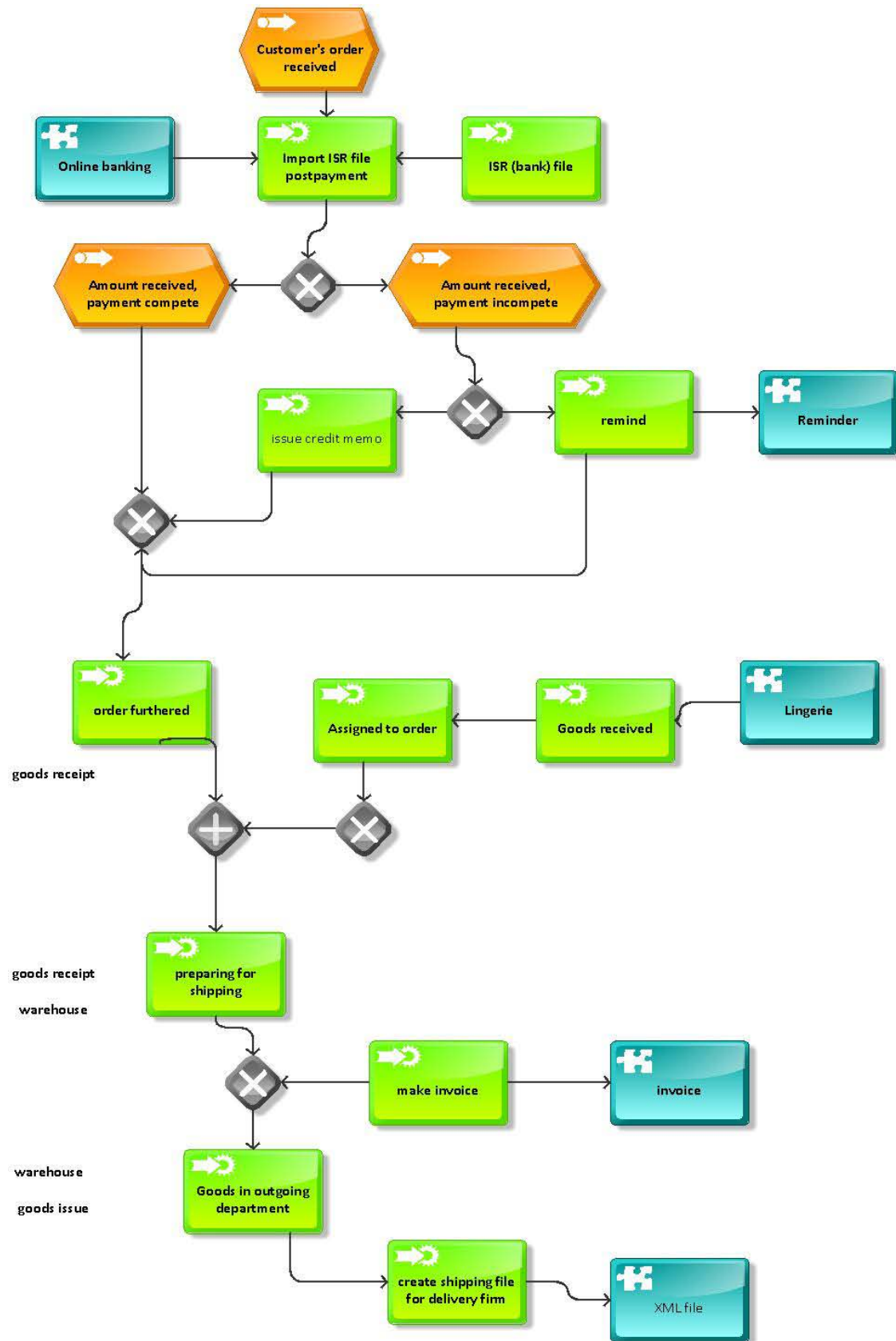
The customer can rate products on the Web site and view all purchase orders from all channels. The data that Candida has stored about its customers has not so far been used to address specific customers within the scope of marketing campaigns. Only in the corporate customer area is offline communication personalized based on customer data.

Process View

To illustrate how the combination of optimized processes and optimized IT support can lead to a high level of productivity in order processing, this section describes two sample customer processes. The example is a purchase **order process in the online shop**. These are typical purchasing scenarios for private customers. The subsequent sections also concentrate on private customer business.

In the first example, a customer selects a lingerie item in the online shop and orders it. The online shop shows that the lingerie item is not available in any of Candida's warehouses but is available at a supplier. For this function, Candida imports the item lists of suppliers, sometimes as often as once an hour. The display of the warehouse stock in the supplier's warehouse is then updated in the online product catalog. The customer requests delivery by post or delivery firm.

The lingerie item must first be ordered from the supplier. The customer pays in advance by online transfer (online banking) and uses the ISR reference number. On the next working day at 7 a. m., Candida finds this transfer on an electronic list (ISR file) that is created by the bank and provided to Candida within the scope of online banking. Once the ISR file has been downloaded, the payment data can be imported to the ERP system. The reference number is checked, the payment posted automatically, and the order released. If the payment amount differs, the customer receives a reminder or credit memo to the value of the difference.



2: Process View: Order Processing

The lingerie item ordered from the supplier arrives at the logistics center after one or two days. When the goods are received, the system checks which order they belong to and reserves them for this order. Goods to be stored that are assigned to individual sales orders or that offset backlogs are flagged as "reserved". They are assigned a storage bin and a putaway document is created. To group the lingerie item with other items, the shipment must be picked. The logistics employee calls the released orders at the warehouse and the setup documents for these orders are created.

The picked orders are transferred to the outgoing mail department together with the invoice. To prepare the shipment, an employee in the outgoing mail department creates a shipping file for the freight forwarder in XML format. This is sent to the freight forwarder by e-mail or FTP. Freight forwarders handle the pallet shipments that are required for bulky goods such as televisions. Based on the shipping file, the freight forwarder generates pallet numbers for shipping and creates a PDF of these, which Candida can call via the Internet and print out. The PDF contains the delivery documents for the shipment that are attached to the pallets. The freight forwarder scans the pallet number for the outgoing delivery..

When the freight forwarder receives notification that the pallet has left the warehouse, he contacts the customer by telephone or text message to arrange a delivery date.

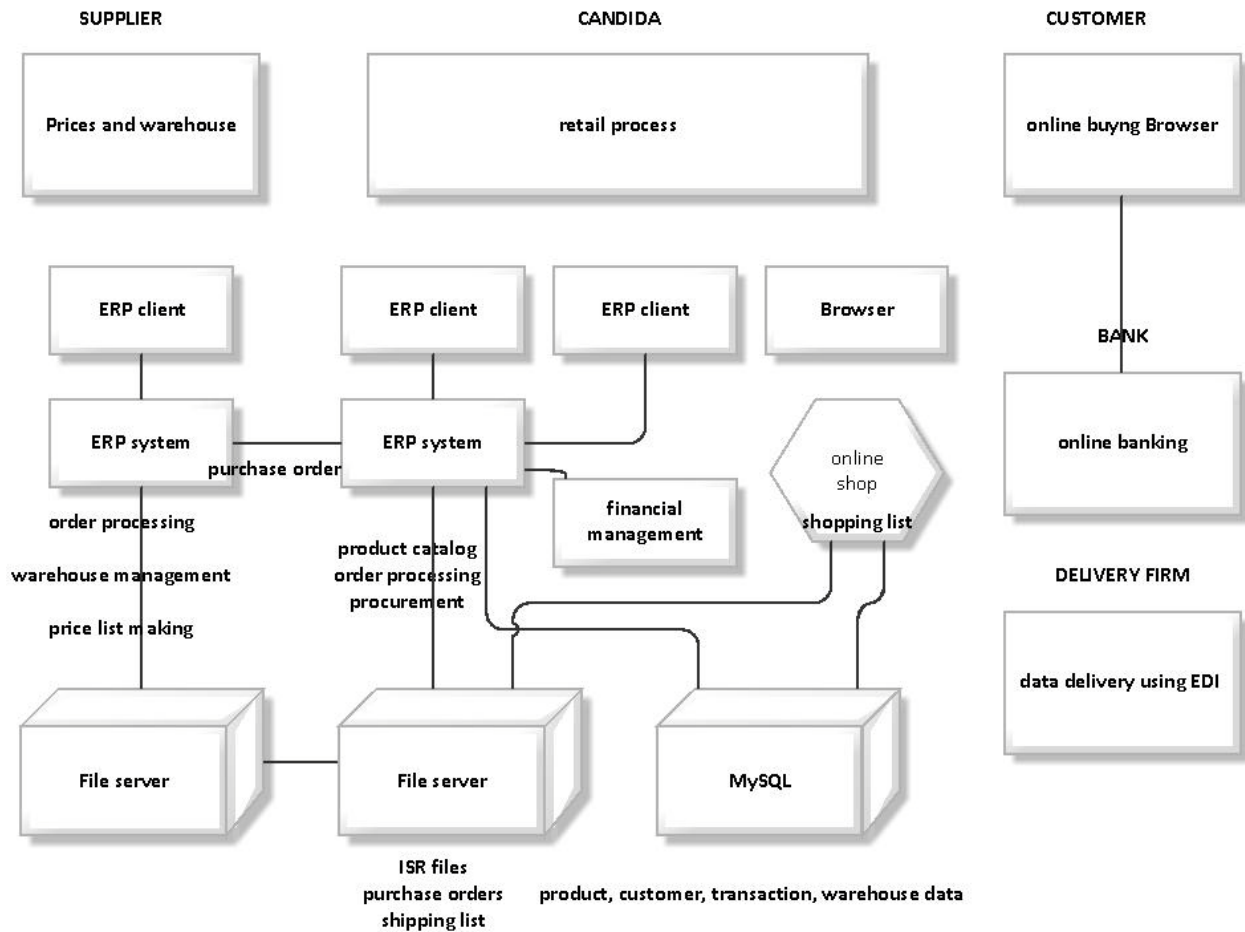
If goods are sent as packages, shipping is also prepared by uploading a file with shipping details to the postal service. Since the address no longer needs to be scanned, the outbound delivery process is optimized and the next-day delivery rate increases from 97.5% to 99%. The shipping list must also be uploaded for payment processing by means of paperless cash on delivery, for which a physical inpayment slip no longer needs to be included in the package. In this case, the mailman is automatically reminded that he must collect payment when he delivers the goods.

Application View

The central applications at Candida are the ERP system and the online shop (Fig. 3). These two systems are used to control procurement, inventory management, sales, order processing, and credit checks and to develop the product catalog. Candida developed both of these systems itself. The ERP system is based on a Microsoft Access application that was mainly programmed in Visual Basic (VB). The online shop was developed using Active Server Pages .NET (ASP.NET) in the Microsoft .NET environment and mainly programmed in C#. Both applications access a common SQL database and work with the same data basis – product master data, customer master data, transaction data, warehouse data, and so on is stored centrally. Both systems also use a document repository on a file server. The ERP system uses the file server, for example, to store and import ISR files and item data from suppliers. Purchase orders that have been sent to the suppliers are also stored on the file server. Product images and PDF files containing product descriptions are stored on a file server for displaying the products in the online shop.

The employees at Candida's headquarters and at all Candida locations (logistics center) use the ERP system by means of proprietary clients that are operated in local networks. A browser is needed to use the online shop and electronic product catalog.

The systems of the banks and transport companies are also involved in the fulfillment phase (see "Business Perspective and Goals"). Depending on the payment method, one or more online banking applications are required for payment processing. The postal service/freight forwarders prepare logistics fulfillment by sending the shipping lists to the transport companies by e-mail or FTP.

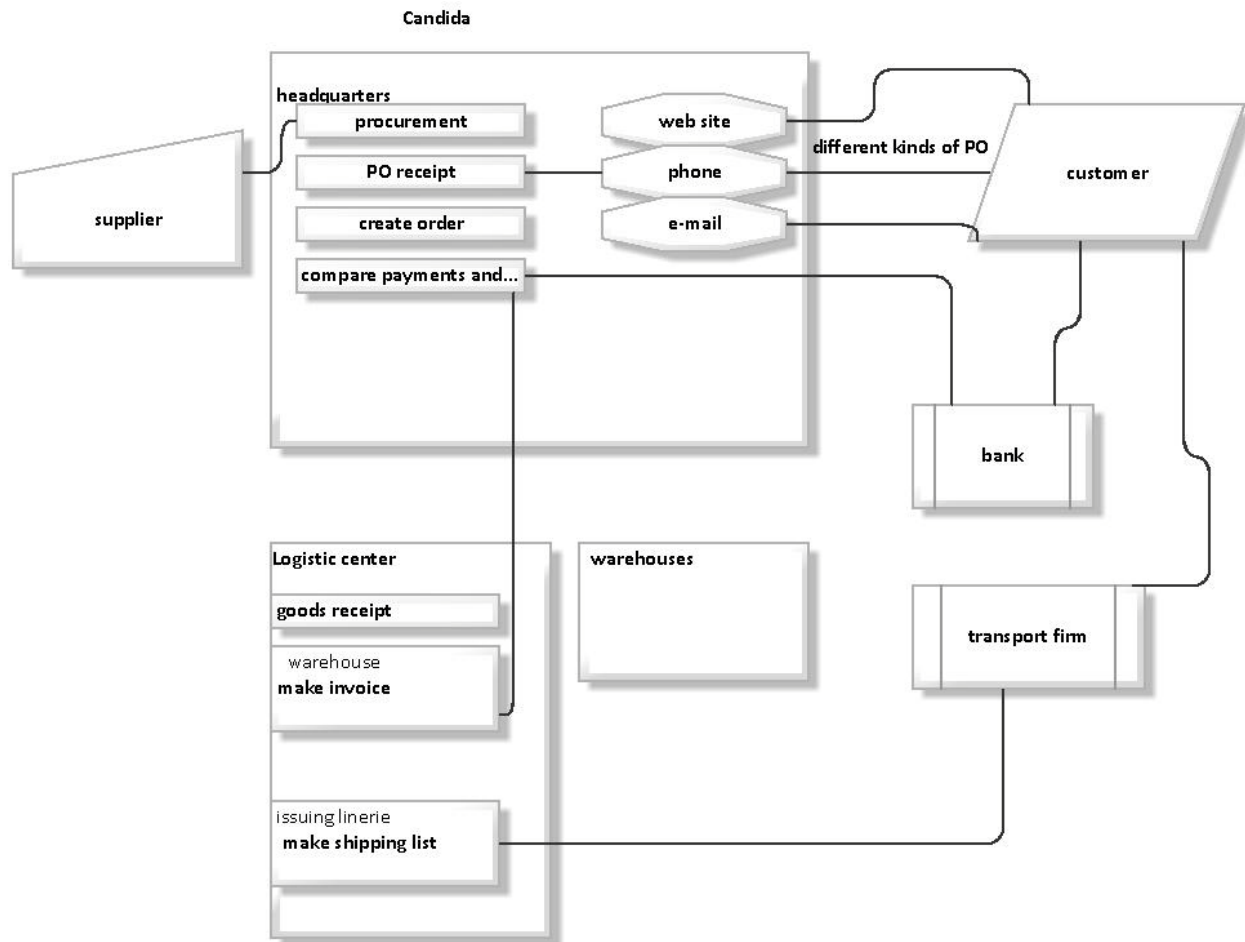


3: Applications

Technical View

The technical view shows the technical structure of the solution. Candida owns the server-side hardware systems and it has nearly all operation done by its owner. The server-side hardware comprises the Web servers, SQL servers, file servers, an exchange server for e-mail communication, and a Microsoft Office Communications Server (OCS) for internal communication. Data exchange over the Internet is processed by a Microsoft Internet Security and Acceleration Server (ISA server), which brings together router, firewall, and VPN functions.

The servers are virtual machines that are installed on Candida's own hardware. The server hardware is configured redundantly for security reasons.



4: Technical View

Operations of project

Investment Decision

Since the director of Candida is familiar with all the processes within the company, he is able to make investment decisions himself. Employees' ideas are accepted and evaluated according to priority on an ongoing basis. Important measures that require only a minimal amount of effort are implemented immediately. Measures that require a greater amount of effort are implemented later on. The cost-benefit ratio of the measure is decisive for its implementation.

Development and Rollout of the Software Solution

The managing director used to develop the custom software himself.

The fact that the director has development and system know-how means that the decision-making and implementation processes for programming are also very short. The ability to implement decisions quickly gives Candida a decisive advantage over its competitors. It is also important that the managing directors have an overview of the system and the strategic goals of the company.

Besides continually improving the software, the solutions are replaced by completely new systems every few years.

Maintenance

Candida employs several programmers to develop and maintain the software and also make ongoing changes and improvements to the system. Technicians maintain employees' PCs. Candida employs between two and five programmers and technicians on average. The employees in the various specialist departments are responsible for generating content for the product catalog and online shop.

Conclusion on the project

Experience

User Acceptance

Since software development is closely based on the processes and requirements of employees, the software has a high level of performance and usability. As a result, employees are happy with the system.

The e-business applications in the B2B area, such as electronic purchase order processing with the suppliers or transfer of shipping lists to transport companies, were developed in collaboration with the business partners, meaning that they meet expectations.

Achievement of Goals and Changes Brought About

All of the objectives set out in the business perspective in "Business Perspective and Goals" regarding in-house development of an ERP system and online shop have been met. The software can be improved on an ongoing basis due to the high level of flexibility when implementing changes. This makes it possible to increase efficiency still further.

Developing and operating custom software also has its drawbacks, of course. Handling the complexity of such a system poses a significant challenge. This creates a dependency on the people who understand the system. Testing is also laborious, as is the further development of the know-how required.

Investments, Profitability, and Key Figures

Continual adjustments to the software incur ongoing costs that are difficult to measure. A comparison calculation showed that for Candida, programming and adjusting its own software would be significantly more cost effective than buying and customizing standard software. What is more, the flexibility of the custom software has created a market advantage that outweighs its costs in that case.

Success Factors

The company uses custom software developed in-house for central processes. On the other hand, operation and support services for hardware (in particular the server systems) are outsourced.

Candida has recognized that operating hardware in-house does not bring any competitive advantages, whereas developing business software that ensures optimal support for business processes does. Process efficiency is a key requirement for coupling a high level of service quality with attractive prices in an industry with low margins. This makes software development a core competence of the retail company.

The online shop.

the ease for the customer to receive the lingerie at their home.

The lower prices due to lack of outlets.

More details on the IT:

- Data storage: The ERP system and online shop use a shared database.
- IT as an enabler: The software allows processes to be improved continually.
- Communication and coordination: The ERP system sends automatically-generated internal and external e-mails that are tailored to specific processes. Status e-mails inform employees and trigger manual processes.
- Data exchange: The frequent exchange of data with suppliers (purchase orders, item lists with availability and prices), transport companies (shipping lists), and banks (ISR files) mostly takes place electronically and primarily by means of XML files.

The benefit to the customers who use the online shop lies not only in usability. Candida supports the transaction process of the customer in all phases.

Long-Term Success Factors

The key to sustainable success lies in the ability to react to changes, constantly develop and implement new ideas, identify trends, and actively design suitable offers. Candida's business software supports this process by enabling adjustments to be made quickly and cost-effectively in line with changing processes. This creates a significant

degree of flexibility – processes can be improved or adapted to changed general conditions or requirements at any time. The company does not stick to previous decisions if they prove to be unprofitable. This allows it to continually improve efficiency and achieve long-term success.

Lessons I Have Learned

The Candida case study shows that software programming can save money in the beginning. Of course, buying standard software can be used under the right circumstances. Each company should carefully check, however, whether an in-house development would be better able to meet its needs at a lower price than a customized standard software solution.

At Candida, this is provided by the company's founder, whose IT knowledge was already a core competence when the company was established.

References: audon & laudon-management information systems-the digital firm, Internet